2/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052241

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED 155 PATIENTS WITH PERIODICAL SCHIZOPHRENIA AND WITH A DURATION OF THE DISEASE FROM 20 TO 56 YEARS. IN ALL CASES UP TO THE LATE PHASES OF THE DISEASE THE PATIENTS PRESERVED A PHASIC CHARACTER OF THE PROCESS WITH AFFECTIVE DISORDERS. DURING THE COURSE OF THE DISEASE THE AUTHOR COULD NOT DEMONSTRATE A COMPLICATION OF THE ATTACKS. ON THE CONTRARY, THERE WAS A REDUCTION OF THE PRODUCTIVE SYMPTOMS. DEPENDING UPON THE FREQUENCY AND CHARACTER OF THE ATTACKS ON THE REMOTE PHASES OF THE DISEASE ALL THE PATIENTS WERE DIVIDED INTO 3 GROUPS: 1) PATIENTS WITH NO ATTACKS, 2) PATIENTS WITH A BIG AMOUNT OF ATTACKS AND 3) PATIENTS WITH A DEVELOPMENT OF THE TYPE CONTINUA. PERSONALITY CHANGES WERE MOST EXPRESSED IN THE LATTER 2 GROUPS. WITH THE ONSET OF THE DISEASE IN PUBERTY INFANTILISM WAS A FREQUENT TRAIT. IT HAS ALSO BEEN DEMONSTRATED THAT IN THE INVOLUTIONAL PERIOD THERE WAS A PROLONGATION AND DEEPENING OF THE ATTACKS.

UNCLASSIFIED

USSR

UDC 576.851.49.097.2

BALTRASHEVICH, A.K. and ROMENENKO, E. Ye., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Antigenic Structure of Escherichia of the 0:26:B6, K769:H32 Serotype and Their Dissociative Variants"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 18-22

Abstract: Eight Escherichia cultures of the 026:B6, K769:H32 serotype isolated from children with acute intestinal diseases were classified as two types. One type fermented dulcite slowly but did not ferment adonit at all, while the other fermented adonit quickly but did not ferment dulcite. The cultures that did not ferment adonit were agglutinable in homologous O serum and had no additional K769 antigen. The cultures that fermented adonit, on the other hand, were inagglutinable in homologous O serum and had the K769 antigen. These cultures also exhibited a greater tendency to dissociation, which resulted in changes in the receptor composition of the K769 antigen. Culturing the 769 strain on Hottinger's agar produced four different types of colonies with a corresponding K antigen structure.
1/1

USSR

UDC 669.183.2/.4.001.8

ROMENETS, V. A., YUZOV, O. V., KOVALENKO, L. V.

"Prospects for Improving Open-Hearth Steel Production"

Dnepropetrovsk, Metallurgicheskaya i gornorudnaya promyshlennost', No 2 (74), 1972, pp 9-12

Abstract: A study was made of the actual efficiency of open-hearth furnaces at the largest shops in the Soviet Union over the period of years from 1963 to 1970. The presented production indexes for the shops show that their steel output increased by 43.5 percent during this time. The reasons for this increase in production were analyzed. The analysis shows that under the existing operating conditions of open-hearth shops, the operation of the furnaces with oxygen scavenging is economically inefficient since it does not permit the required increase in output capacity of the furnaces. Mass withdrawal from operation of the furnaces with scavenging is impossible in practice since this would lead to a reduction in the steel production of the existing furnaces. However, open-hearth steel production can be improved by using the scrap-oxygen process in the open-hearth furnaces or by replacing the furnaces by continuous-action steelmaking units. The advantages of the new systems are discussed.

1/1

USSR

YEFIMOV, Yu., BARANOV, G., GALALU, V., and ROMENSKIY, Ye.

"Digital Functional Converter With Nonuniform Separation of the Argument"

Moscow, Elektronno-Vychislitel'naya Tekhnika i Programmirovaniye No. 4, 1971, pp 109-111

Abstract: A possible method for shortening the computation time in electronic computers, the use of a special functional converter operating in conjunction with the computer, is discussed. It is noted that analog functional converters are useless because of poor accuracy and the complexity of devices that must be connected with the computer. The digital functional converter, however, is convenient for obtaining functional dependence of the $y = f(x)$ type with a finite number of plotting points, with intermediate values found through interpolation methods. Two graphs showing approximations of curves with uniform separation and with nonuniform separation are shown for the sake of contrasting the two methods; the much closer approximation of nonuniform separation of interpolated points is strikingly evident. A functional diagram of the converter is given, together with an explanation of its operation. From prototypes of the various units in the converter

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USSR

YEFIMOV, Yu., et al, Elektronno-Vychislitel'naya Tekhnika i Programmirovaniye, No. 4, 1971, pp 109-111

and their behavior, the authors draw the conclusion that when the converter is made of the elements used in the "Ural-10", the time for computing the functional dependence $y = f(x)$ is less than 10 μs, as compared with the time of 2-10 ms for the "Minsk-2" to compute even the simplest functions.

2/2

USSR

UDC 637.127.6:632.95

ROMINA. L. I., All-Union Scientific Research Institute of Milk Production

"Determination of Trichlorometaphos 3 Content in Milk by Various Methods"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 43-44

Abstract: Cow No 1, with a live weight of 400 kg. and milk production of 18 liters per day, was treated 5 times with a 2% emulsion of the chemical at 7 day intervals. Four liters of emulsion were used in the first application, 3 in the second and 1.5 in each of the last three. Trichlorometaphos 3 content was determined by colorimeter based on the reaction of 2,4,5-trichlorophenol with 4-aminoantipyrine. Also, the activity of cholinesterase in the milk was determined by an enzyme method. A second cow was treated 3 times with a 1.5% concentration, each time with a quantity of 1.5 liters. The colorimeter method made it possible to determine both the presence and the quantity of trichlorometaphos 3 in the milk, which was highest in both cases the day after application and subsequently decreased.

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USSR

UDC 632.951

ROMINA, L. I., Candidate of Biological Sciences, All Union Scientific Research Institute of the Milk Industry

"Photometric Analysis of Carbophos Residues in Milk, Meat and Motley Grass"

Moscow, Khimiya v sel'skom khozyaystve, No 11, 1972, pp 44-45

Abstract: A photometric method is proposed for control analyses of milk and other products of animal and plant origin for the carbophos content in them. The method is based on the color reaction of sodium dimethyldithiophosphate formed during alkaline hydrolysis of carbophos with copper ions. The instruments, reagents and analysis procedure are described in detail. The presented test results indicate that the proposed method of carbophos analysis is highly sensitive and simple. It can be used in agrochemical and zoo-technical laboratories and also in the laboratories of the sanitation and epidemic hospitals for determining carbophos residues in plant and animal products.

1/1

Acc. Nr. AP0100239 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0062

111836q **Radiation-chemical telomerization of ethylene by methyl formate.** Bryantsev, I. N.; Zagorets, P. A.; Romina, N. N.; Terent'ev, A. B.; Freidlina, R. Kh. (Inst. Elementoorg. Soedin., Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1970, (1), 169-71 (Russ). The telomerization of $H_2C:CH_2$ with HCO_2Me gives $Me(CH_2)_nCO_2Me$ (I) (n = 1, 3, and 5), $HCO_2(CH_2)_nMe$ (II) (n = 2, 4, or 6), a compd. of mol. formula $C_{10}H_{20}O_2$, and $C_2H_5CHEtCO_2Me$, whether initiated with *tert*-Bu_2O_2 or γ-irradn. The increase in the reaction temp. increases the yields of I + II (at 125° and 190°, the yields were 0.25 and 7.0% and the *G*-values 0.71 and 20.0, resp.) and the proportion of II in the mixt. increased. The percentages of the products listed above at 125° were 20.1, 27.6, 21.2, 2.5, 4.2, 3.4, 17.0, and 4.0, resp.; and at 190°, 12.6, 19.4, 16.4, 7.8, 15.5, 8.7, 9.4, and 9.7, resp. With *tert*-Bu_2O_2 as initiator, the yield was 24.0% at 140° in 4 hr and the product percentages were 25.9, 20.0, 10.8, 19.4, 9.7, 3.2, 6.2, and 4.3%, resp.

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USSR

UDC 519.281

LIYSHITS, M. Ye., ROMM, B. I.

"Solution of the Inverse Problem from the Theory of Errors, Based on the Principle of Unequal Influences"

Metody Predstavleniya i Apparaturn. Analiz Sluchayn. Protsessov i Poley. 3-y Vses. Simpozium. Sekts. 1 [Methods of Representation and Hardware Analysis of Random Processes and Fields, Third All-Union Symposium, Section 1 -- Collection of Works], Leningrad, 1970, pp 63-70, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V143 by V. Noskov).

Translation: The function of many variables $y = f(x_1, x_2, \ldots, x_m)$ is determined on the basis of results of measurements of x_i. A limiting absolute error Δy_3 and set of limiting absolute errors Δx_{ij} ($i = 1, 2, \ldots, m$; $j = 1, 2, \ldots, q$) are fixed. On the assumption of linearity $\Delta y = \sum_{i=1}^{m} f_i \Delta x_{ij}$, where $f_i = \left|\frac{dy}{dx_i}\right|$, the problem of finding the set of first errors Δx_{ij} satisfying the condition $\sum_{i=1}^{m} B_{ij}$ where $\sum_{i=1}^{m} f_i \Delta x_{ij} \leq \Delta y_3$ is found. When strict inequality is possible, the "quasioptimal" solution is sought considering the weight coefficient B_{ij}, reflecting the technical and economic indicators of the measuring and calculating equipment. An iteration algorithm for search for the solution is suggested, minimizing

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USSR

LIVSHITS, M. Ye., ROMM, B. I., Metody Predstavleniya i Apparaturn. Analiz Sluchayn. Protsessov i Poley. 3-y Vses. Simpozium. Sekts. 1, Leningrad, 1970, pp 63-70.

UDC 519.281

the sum $\sum_{i=1}^{m} B_{ij}$ where $\sum_{i=1}^{m} f_i \Delta x_{ij} < \Delta y_3$.

2/2

USSR

UDC 541.67:547.241

ROMM, I. P., ROZANEL'SKAYA, N. A., GUR'YANOVA, Ye. N., BOKANOV, A. I., and STEPANOV, B. I., Scientific Physical-Chemical Research Institute imeni L. Ya. Karpov and Moscow Chemical Technological Institute imeni D. I. Mendeleyev

"Dipole Moments of Methyl Substituted Triphenylphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 7, Jul 73, pp 1650-1651

Abstract: Dipole moments of tri-, hexa-, and nonamethyl substituted triphenylphosphines have been determined. All the results except for the nonamethyl homolog agreed with literature data. The trimesitylphosphine dipole was lower by 0.5 D than that of the triphenylphosphine. This indicates considerable change in the geometry of triphenylphosphine upon introduction of two methyl groups into the orthopositions of each ring.

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USSR

UDC 541.49:547.558 + 546.46

ROMM, I. P., SADYKOVA, E. M., GUR'YANOVA, Ye. N., and KOLLI, I. D., Scientific Physical-Chemical Research Institute Imeni L. Ya. Karpov and Moscow State University Imeni M. V. Lomonosov

"Study of the Phosphine Complexes With the III Group of Metal Halides and pπ Conjugation in Aromatic Phosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 728-739

Abstract: Heat effects of the formation reactions of aromatic and aliphatic phosphine complexes with boron trifluoride and trichloride aluminum bromide and gallium trichloride and the dipole moments were determined in benzene at 25°. Symbatic changes were observed of the degree of charge transfer and heats of the formation of donor-acceptor complex bonds in a series of aliphatic phosphine complexes. The polarity and complex stability change in the order $BF_3 < AlBr_3 \cong GaCl_3$. The π integrals of the overlap of C-N and C-P bonds in aromatic amines and phosphines have been calculated. It has been shown that the hybrid sp orbital of the free pair of electrons at the phosphorus atom is capable of real pπ overlap. The pπ energies of conjugation in the molecules of dipropylphenylphosphine, ethyldiphenylphosphine, and triphenylphosphine have been determined by the method of complex formation.

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USSR

UDC 541.572.5+541.572.8

ROMM, I. P., SADYKOVA, E. M., GUR'YANOVA, Ye. N., KOLLI, I. D., and KOCHESKOV, K. A., Academician, Physical Chemistry Institute imeni L. Ya. Karpov, Moscow, and Moscow State University imeni M. V. Lomonosov, Moscow

" p π-Conjugation in Triphenylphosphine"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

Abstract: The p π-conjugation (interaction of the undivided electron pair at P with the π-electrons of the aromatic system) of Ph_3P was studied on the basis of the dipole moments (d. m.) of complexes $R_3P.MX_3$ (R = Bu, hexyl, octyl, Ph) of phosphines, which are active n-donors, with a number of acceptors (MX_3 = $AlBr_3$, $GaCl_3$, BCl_3) and of the heats of formation of $R_3P.MX_3$ (MX_3 = $AlBr_3$, $GaCl_3$). The thermal effects involved in the substitution of R_3P with dimethylcyclohexylamine in $R_3P.BF_3$ (R = Bu, hexyl, Ph) and of Ph_3P with Bu_3P in $Ph_3P.BCl_3$ were also considered. The d. m. of complexes $Alkyl_3P.AlBr_3$ were close to each other, but the heat of formation of the second was much lower than that of the first because of energy losses associated with breaking of the p π-conjugation in R_3P during complex-formation. On the basis of this difference and similar differences for complexes with other

USSR

ROMM, I. P., et al, Doklady Akademii Nauk SSSR, Vol 195, No 2, 1970, pp 372-375

acceptors (those for complexes with BF_3 and BCl_3 were calculated from the thermal effects in the substitution reactions), the p π-conjugation energy E_c in Ph_3P was estimated at 11.7 $\pm$ 2 kcal/mole as an average of values based on data for complexes with the four acceptors MX_3. E_c for Ph_3P was lower than that for N-methyldiphenylamine (E_c = 14.9 kcal/mole) and much lower than that for Ph_3N.

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UDC 621.039.51

USSR

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

Translation: Neutron physics problems are frequenty solved by applying the theory of perturbations -- to calculate the change in criticality of nuclear reactors or various neutron flux functionals. The possibility is studied of using the theory of perturbations for calculation of reactor shielding. The theory of perturbations (generally speaking of high orders) can also be applied to the unstable equation of neutron transfer. In the experiments described with pulsed neutron source, a change in decay constants was achieved by two means: by changing the geometric size of the specimen or by changing its diffusion charac-

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USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

teristics (introduction of absorbers or scattering agents in homogeneous or discrete form, etc.). In the experiment discussed, the additional possibility is demonstrated of changing the decay constant by changing the position of heterogeneities in the moderator with constant volume ratio. This provides a method for studying the diffusion characteristics of heterogeneous systems or systems with local heterogeneities, since a new experimental dependence appears and, consequently, it can be compared with various calculation methods. 8 figures, 7 biblio. refs.

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USSR UDC 621.039.51

YUROVA, L. N., ROMODANOV, V. L., SMIRNOV, V. YE., PANKRATENKO, D. A., and SHISHKOV, L. K.

"Application of the Method of the Pulsed Neutron Source to Systems With Heterogeneities"

Fiz. Yadern. Reaktorov (Nuclear Reactor Physics -- Collection of works), No 2, Moscow, Atomizdat Press 1970, pp 3-10 (From Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

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USSR

YUROVA, L. N., et al., Fiz. Yadern. Reaktorov, No 2, Moscow, Atomizdat Press 1970, pp 3-10 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 3, 1971, Abstract No 3.50.76)

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USSR

UDC:536.468+662.215.1

ROMODANOVA, L. D., POKHIL, P. F., Moscow

"Mechanism of Influence of Silicon Dioxide on Combustion Rate of Compositions"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 285-290

Abstract: This work presents a study of the mechanism of the influence of SiO_2 on the combustion rate of a stoichiometric composition of NH_4ClO_4+Al and the same composition with a polyoxymethylene binder. The experiments were performed in a constant pressure bomb under nitrogen pressure, and the combustion rate was recorded photographically. Addition of SiO_2 1% of the composition not only increases the combustion rate but also changes the nature of the dependence of combustion rate on pressure. The higher the pressure, the stronger the influence of the dioxide. The experiments indicate that the influence of silicon dioxide results from a breakdown of the oxide film on the aluminum, creating favorable conditions for penetration of oxygen to the metal. Addition of silicon dioxide to the composition with

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USSR

ROMODANOVA, L. D., POKHIL, P. F., Novosibirsk, Fizika Goreniya i Vzryva, UDC:536.468+662.215.1
Vol. 6, No. 3, Sep 70, pp. 285-290

the polyoxymethylene binder results in almost no increase in combustion rate in the high pressure area, and decreases combustion rate in the low pressure area.

2/2

1/2 040 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF THE ACTIVITY OF ALUMINUM AND MAGNESIUM POWDERS ON THE COMBUSTION OF COMPOSITIONS -U-

AUTHOR-(02)-ROMODANOVA, L.D., POKHIL, P.F.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA GORENIIA I VZRYVA, VOL. 6, MAR. 1970, P. 126-128

DATE PUBLISHED----MAR70

SUBJECT AREAS--PROPULSION AND FUELS, MATERIALS

TOPIC TAGS--COMBUSTION RATE, AMMONIUM PERCHLORATE, ALUMINUM, MAGNESIUM, IRON OXIDE, VANADIUM OXIDE, PRESSURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605017/F01 STEP NO--UR/0414/70/006/000/0126/0128

CIRC ACCESSION NO--AP0140766

UNCLASSIFIED

2/2 040 UNCLASSIFIED

CIRC ACCESSION NO--AP0140766 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF SELF IGNITION, AND COMBUSTION RATES VS PRESSURE AND ACTIVITY, IN MIXTURES OF AMMONIUM PERCHLORATE WITH ALUMINUM AND MAGNESIUM COMPRESSED TO MAXIMUM DENSITIES AND HAVING ACTIVITIES OF 99, 80, 60, 40, OR 20PERCENT. IT IS FOUND THAT THE ACTIVITY LEVEL OF THE MIXTURE HAS NO APPRECIABLE EFFECT ON THE PRESSURE DEPENDENT COMBUSTION RATES AT PRESSURES RANGING FROM 1 TO 120 KGF-SQ CM. THE STIMULATING EFFECTS OF FERRIC AND VANADIUM OXIDE ADDITIONS ON THE COMBUSTION PROCESS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 669.292.5.295.297.849.018.5.537.312.62

RON, V. V., YEFIMOV, Yu. V.

"Superconducting Alloys of Vanadium with Titanium, Alloyed with Hafnium and Rhenium"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 161-165. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 I754 by the authors).

Translation: The influence of Hf and Re (up to 10 at.%) added individually on the superconducting and mechanical properties of the equiatomic alloy of V and Ti is studied. The alloying elements were introduced to replace Ti. Alloying causes an increase in the hardness and strength of the alloys, while the superconducting characteristics decrease. However, with a content of up to 1 at.% Hf or up to 5 at.% Re in the trinary alloys, increased technological properties for cold deformation were observed. These alloys have rather high superconducting properties (T_c 7-8°K, critical current density at 4.2°K and 26 koe, $1.5 \cdot 10^4$ a/cm^2). 3 figs; 2 tables; 5 biblio refs.

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USSR

UDC: 537.312.62

VOROB'YEVA, N. S., KUNAKOV, Ya. N., RONAMI, G. N., KUZNETSOVA, S. M.

"Investigation of the Conditions of Formation of Superconducting Compound V_3Ga Made by the Diffusion Method"

Nauchn. tr. N.-i. i proyektn. in-t redkomet. prom-sti (Scientific Works of the Scientific Research and Design Institute of the Rare Metals Industry), 1971, 32, pp 115-123 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D531)

Translation: A heat-treatment cycle is recommended for making V_3Ga superconductor. Three illustrations, two tables, bibliography of fourteen titles.

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USSR

UDC 621.385.032.5:666.3.037.5

ZHMUD', YE.S., SHMELEV, A.YE., PERSHINA, L.K., RONAMI, G.N., KUDOYAROV, M.V.

"Microroentgen Spectral Investigation Of Ti-Ceramic A-995 And Ti-Ag-Ceramic A-995 Seals"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 11, pp 117-123 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A104)

Translation: Distribution of the elements in experimental metalceramic seals was investigated with the aid of a Type MAR-1 microanalyzer and a microanalyzer of the Sames firm. For the metal part of the seals Ti-Ceramic A-995, it is established that the maximum concentration of aluminum is observed near the ceramic, and the titanium and oxygen in the depth of the metal. In the seals Ti-Ag-Ceramic A-995, a concentration of almost all the titanium close to the ceramic is detected, and the silver is in the central part of the metal, while in the initial state the silver is found between the ceramic and titanium. The results obtained confirm the accuracy of the conclusions made during x-ray structural investigation of the seals. Summary.

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UNCLASSIFIED PROCESSING DATE--02OCT70

--LOCAL X RAY SPECTRAL STUDY OF A ZIRCONIUM,NIOBIUM,NICKEL SYSTEM -U-

AUTHOR-(04)-YEVDOKIMOVA, A.D., KUZNETSOVA, S.M., RONAMI, G.N., SOKOLOVSKAYA, E.M.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV. KHIM. 1970, 11(1), 62-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY ANALYSIS, SPECTROSCOPIC ANALYSIS, ZIRCONIUM ALLOY, NIOBIUM ALLOY, NICKEL ALLOY, METAL HEAT TREATMENT, PHASE DIAGRAM, PHYSICAL CHEMISTRY PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1969/0614

STEP NO--UR/0189/70/011/001/0062/0066

CIRC ACCESSION NO--AP0107211

UNCLASSIFIED

2/2 029 UNCLASSIFIED

CIRC ACCESSION NO--AP0107211 PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TERNARY SYSTEM WAS STUDIED USING ZR-NB-NI ALLOYS WHICH HAD BEEN HEAT TREATED FOR 700 HR AT 800DEGREES AND 2000 HR AT 500DEGREES. THE RESULTS ARE TABULATED AND THE PHASE EQUIL. DIAGRAM IS GIVEN. NO ESSENTIAL CHANGE WAS OBSERVED IN THE CHARACTER OF THE INTERACTIONS FROM THOSE DETD. BY PHYS. CHEM. METHODS. THE COMPDS. ZRNI SUB5, ZR SUB2 NI SUB7, AND ZR SUB2 NI SUB5 FORM QUASIBINARY SECTIONS WITH NBNI SUB3. THE REGION OF HOMOGENEITY FOR NBNI SUB3 IS WIDENED GREATLY BY ALLOYING WITH ZR.

UNCLASSIFIED

UDC: 536.7

USSR

YEVDOKIMOVA, A. D., KUZNETSOVA, S. M., RONAMI, G. N., SOKOLOVSKAYA, YE. M., Department of General Chemistry, Moscow State University imeni M. V. Lomanosov, Moscow, Ministry of Higher and Secondary Specialized Education RSFSR

"Investigation of the Zirconium-Niobium-Nickel System by Local X-ray Spectral Analysis"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, Vol 11, No 1, Jan/Feb 70, pp 62-66

Abstract: Data are given from local X-ray spectral analysis of the ternary zirconium-niobium-nickel system using the MS-46 microanalyzer made by the French "Cameca" Company. Alloys of zirconium with niobium and nickel heat treated at 800°C for 700 hrs and at 500°C for 2,000 hrs were used. The error in determination of the element being analyzed was 1-2%. The resultant data are tabulated, and a diagram of the phase equilibria in the system at 800°C is given. The compounds $ZrNi_5$, Zr_2Ni_7 and Zr_2Ni_5 form quasi-binary cross sections with $NbNi_3$. The region of homogeneity of the intermetallic compound $NbNi_3$ is considerably expanded by alloying with zirconium. An analogous picture is observed in the case of Zr_7Ni_{10}. The phase diagram plotted from the experimental data agrees with those obtained by other methods of physical and chemical analysis.

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- 2 -

USSR UDC: 621.376.2

BARZHIN, V. Ya., KRUTOFALOV, E. B., PETROV, A. F., RONDIN, Yu. P., KOSHARNOVSKIY, G. V.

"A Device for Increasing Depth of Modulation"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299936, Division H, filed 11 Aug 69, published 26 Mar 71, p 204

Translation: This Author's Certificate introduces a device for increasing depth of modulation containing a push-pull amplifier with transformer input, and an amplitude detector. In the collector circuit of the amplifier is a tank circuit tuned to the carrier signal frequency. As a distinguishing feature of the patent, depth of modulation is increased with simultaneous signal amplification, and the depth coefficient is made independent of the amplitude of the input signal by connecting the above-mentioned amplitude detector between the primary winding and the centertap of the secondary winding of the input transformer of the push-pull amplifier.

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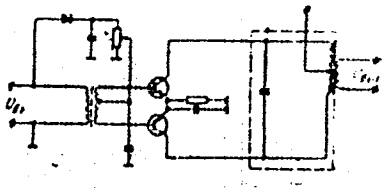
BARZHIN, V. Ya. et al., USSR Author's Certificate No 299936



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USSR UDC 615.272.6:547.963.32].015:616-006-092.9

MATIYENKO, N. A., RONICHEVSKAYA, G. M., BELYAYEV, D. K., MARTYNOVA, R. P., and GALGANEK, N. I., Institute of Cytology and Genetics, Siberian Department, Academy of Sciences USSR, Novosibirsk

"Inhibitory Effect of Homologous Ribonucleic Acid on the Growth of Spontaneous Tumors in Mice of the High-Cancer A and C_3H Lines"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 45-47

Abstract: Deproteinized RNA from mice of the low-cancer $C_{57}Bl$ line was injected subcutaneously into A and C_3H mice with palpable mammary tumors. The antitumor effect of the preparation was assessed from the differences in the weight of tumors in control and experimental mice (the tumors were systematically weighed in animals sacrificed 10, 20, 30, 40, 80, and 100 days after the injection) and in the survival time of animals. Whereas the weight of tumors in control mice increased rapidly for the first 1 to 1-1/2 months and remained stable thereafter, it was significantly lower (50 to 77%) in the experimental group at 1/2

USSR

MATIYENKO, N. A., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 45-47

all stages, especially during the first 2 months. The survival time of experimental animals was also markedly longer than that of controls. Injection of the RNA had no toxic effects, judging by the fact that the body weight of experimental and control animals was virtually the same at the end of the experiment.

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USSR

UDC 517.5

AKHIYEZER, N. I., RONKIN, L. I.

"Separately Analytical Functions of Many Variables and 'Wedge Point' Theorems"

Moscow, Uspekhi Matematicheskikh Nauk, Vol XXVIII, No 3(171), 1973, pp 27-42

Abstract: In this article the Bernstein method [S. Bernstein, Sur l'ordre de la meilleure approximation des fonctions continues par des polynomes de degre donne, Bruxelles, 1912] is used to obtain some propositions related to the Bernstein theorem belonging to other authors, as well as some new results. Another problem is investigated pertaining to the group of theorems of modern theory of functions of many variables, significant also with respect to applications to quantum field theory. These are the so-called "wedge point" theorems, the first of which was proved by Bogolyubov [N. N. Bogolyubov, et al., Voprosy teorii dispersionnykh sootnosheniy, Moscow, Fizmatgiz, 1958].

The discussion includes the holomorphic continuation of functions with the product of two neighborhoods, the holomorphic continuation of a function with the product of real axes, the relation of the Bernstein theorem to the wedge point theorems, removal of the assumption of boundedness of separate continuation, and some generalizations.

1/1

RONKIN, M.A.

UDC 617.014.[illegible]

USE OF MULTICHANNEL RHEOGRAPHY IN PHYSIOLOGICAL INVESTIGATIONS [illegible]

[Article by V. B. Zubavin, L. L. Letkova, Yu. S. Mireshnikov and [illegible] Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol [illegible] No 5 [illegible] October 1972, pp 75-79, submitted for publication 29 December 1971]

Rheography as a method for studying the cardiovascular system [illegible] into broad use in clinical practice and experimental investigations. [illegible] and two-channel rheographs have been used in most investigations. [illegible] such instruments make it possible to register pulse blood filling of d[illegible] ent organs only in succession. In a research plan this can be applied [illegible] in those cases when the organism is in a stationary state or when hemo[illegible] shifts occur slowly. However, if an investigator is dealing with extre[illegible] exposures and accordingly with rapidly transpiring changes in the cardi[illegible] lar system (such as in experiments on a centrifuge) the need arises for [illegible] taneous observation of processes transpiring in many vascular zones. [illegible] tion, long-imparted accelerations sometimes cause oppositely directed [illegible] in blood filling in parts of the body situated under conditions differ[illegible] respect to hydrostatics. The multichannel rheography method is entir[illegible] quate for studying hemodynamic reactions in this situation. This makes [illegible] possible to evaluate the changes in several vascular zones simultaneous[illegible] to compare the results.

In this article we will not give a detailed analysis of the coll[illegible] material but will limit ourselves to an evaluation of the possibility [illegible] channel rheography as a method for studying the cardiovascular system [illegible] experimental conditions on a centrifuge.

The experiments were conducted on a centrifuge with a radius of [illegible] The rheogram was registered using an original 6-channel rheographic att[illegible] ment designed by S. L. Gorshcharuk and M. A. Ronkin. The rheograph was [illegible] up directly in the centrifuge cabin because the great length of the [illegible] line between the centrifuge cabin and the recording apparatus (35-40 m) [illegible] ly reduces noise immunity and increases circuit capacitance-resistance, [illegible] exerts a considerable effect on power transfer and shape of the useful [illegible] Registry of the rheogram signal was with a 13-channel electroencephalogr[illegible] manufacture by the Japanese Sanai firm with a rate of paper movement 3[illegible]

JPRS 57517
15 Nov 72

USSR

UDC 621.383.292

VIL'DGRUBE, G.S., DUNAYEVSKAYA, N.V., PODOKSINA, M.D., RONKIN, ZH.M., DALINENKO, N.K.

"Photomultiplier For Observation Of Coherent Radiation"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektronnoluch. i fotoelektr. pribory (Electronic Technology. Scientific-Technical Collection. Electron Beam and Photoelectric Devices), 1970, Issue 2(16), pp 3-5 (from Rzh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A253)

Translation: The construction is described and the principal parameters are presented of the FEU [photomultiplier]--84 with multialkali photocathodes, intended for observation of the coherent radiation signals of a laser; the FEU-84 has the dimensions and basing of the FEU-15 and FEU-16. The spectral response of the photocathode at a wavelength of 700 nm amounts to 80 ÷ 270 microampere/lm. The multiplier system contains 12 louvered dynodes of CuAlMg alloy. The limiting output current is 5 ma in a static regime and 0.8 a in a pulsed. The anode sensitivity is 100 a/lm at a voltage of 1250--1600 v. The number of noise pulses at a plateau of the counter characteristic curve does not exceed $3 \div 7 \cdot 10^3$ sec^{-1}. The sensitivity threshold is $5\text{-}8 \cdot 10^{13}$ $lm/hz^{-1/2}$. 2 ill. 2 ref. N.S.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF (CH SUB3)SUB3 NEGATIVE GEC SUB5 H SUB5 CYCLOPENTADIENYLTRIMETHYLGERMANIUM -U-

AUTHOR-(05)-USTYNYUK, YU.A., STRUCHKOV, YU.T., ALEKSEYEV, N.V., VENYAMINOV, N.N., RONOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 127-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, GERMANIUM COMPOUND, MOLECULAR STRUCTURE, COMPLEX COMPOUND, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0315 STEP NO--UR/0192/70/011/001/0127/0129

CIRC ACCESSION NO--AP0103970
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0103970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON DIFFRACTION INVESTIGATION OF THE TITLE COMPD. SHOWED THAT THE STRUCTURE CONTAINS A LOCALIZED SIGMA GE-C BOND BETWEEN THE C SUB5 H SUB5 RING AND THE GEME SUB3 GROUP. THE GE ATOM HAS TETRAHEDRAL ENVIRONMENT, WITH 4 EQUAL GE-C BONDS (1.97 ANGSTROM EACH) AND LIES IN A SYMMETRY PLANE OF THE C SUB5 H SUB5 RING. THE C SUB5 H SUB5 RING IS NOT PLANAR. ONE C ATOM LIES IN A PLANE FORMING A DIHEDRAL ANGLE OF 24 PLUS OR MINUS 4DEGREES TO THE PLANE OF OTHER FOUR C ATOMS, WHICH FORM A BUTADIENE LIKE GROUPING. THE GE-C BOND FORMS AN ANGLE OF 52 PLUS OR MINUS 4DEGREES TO THE PLANE CC(GE)C, THE THREE C ATOMS BEING A FRAGMENT OF THE C SUB5 H SUB5 RING. THE C-C BOND LENGTHS IN THE C SUB5 H SUB5 RING ARE 1.50 AND 1.46 ANGSTROM.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTRON DIFFRACTION STUDY OF THE MOLECULAR STRUCTURE OF TRIMETHYLCYCLOPENTADIENYLSILANE -U-

AUTHOR-(05)-VENYAMINOV, N.N., USTYNYUK, YU.A., ALEKSEEV, N.V., RONOVA, I.A., STRUCHKOV, YU.T.

COUNTRY OF INFO--USSR

SOURCE--ORGANOMETAL. CHEM. 1970, 22(3), 551-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, MOLECULAR STRUCTURE, CYCLIC GROUP, ORGANIC SILANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1981 STEP NO--NE/0000/70/022/003/0551/0555

CIRC ACCESSION NO--AP0125570

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125570
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. STRUCTURE OF TRIMETHYLCYCLOPENTADIENYLSILANE, C SUB5 H SUB5 SIME SUB3, HAS BEEN STUDIED BY ELECTRON DIFFRACTION IN THE VAPOR PHASE. THE SI ATOM IS BONDED BY THE LOCALIZED SIGMA BOND WITH ONE OF THE CYCLOPENTADIENYL CARBON ATOMS. THE SI-C BOND DISTANCES ARE 1.90 ANGSTROM. THE CYCLOPENTADIENYL RING HAS AN "ENVELOPE" CONFORMATION, THE DIHEDRAL ANGLE BETWEEN PLANAR 4 AND 3-MEMBERED FRAGMENTS OF THE RING BEING 22DEGREES. THE SI-C BOND MAKES AN ANGLE OF 56DEGREES WITH THE PLANE OF THE BENT OUT "ENVELOPE FLAP". ASSUMING THE QUALITY OF ALL C-H BOND LENGTHS AND ALSO OF THREE C-C BOND LENGTHS WITHIN THE PLANAR 4-MEMBERED FRAGMENT OF THE CYCLOPENTADIENYL RING, THE FOLLOWING VALUES ARE OBTAINED: GAMMA(C-H) EQUALS 1.11, GAMMA(C-C) EQUALS 1.53, GAMMA(C:C) EQUALS 1.40 ANGSTROM.
FACILITY: INST. ORG.-ELEM. COMPD., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CALCULATION OF NONNUCLEAR SCATTERING IN A BORN APPROXIMATION -U-

AUTHOR-(03)-GAPOTCHENKO, N.I., ALEKSEYEV, I.V., RONOVA, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 131-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION, MOLECULAR STRUCTURE, ELECTRON SCATTERING, COULOMB SCATTERING, ELECTRON SHELL STRUCTURE, CALCULATION, ORGANOZIRCONIUM COMPOUND, ZIRCONIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/2226 STEP NO--UR/0192/70/011/001/0131/1034

CIRC ACCESSION NO--AP0127588

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127588

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE GAS ELECTRON DIFFRACTION STUDIES OF THE STRUCTURE OF MOLS. CONTG. ATOMS WITH A LARGE DIFFERENCE IN AT. NOS. (FOR EXAMPLE, BR SUB3 GEMN(CO)SUB5 OR (C SUB5 H SUB5)SUB2 ZRCL SUB2) IT WAS NECESSARY TO ACCOUNT FOR SCATTERING NOT ONLY ON THE NUCLEI BUT ALSO ON THE ELECTRON SHELLS. THIS INVOLVES SEVERAL EQUATIONS FOR CALCG. THE SCATTERING INTENSITY OF THE MOL. AND AT. COMPONENTS, THE INCOHERENT SCATTERING INTENSITY, AND THE NONNUCLEAR SCATTERING.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.3.03[illegible]6

ZABORONOK, G. F., ZELENTSOV, T. I., RONZHIN, A. S., SOKOLOV, B. G.

"Electronic Melting of Metals"

Moscow, Elektronnaya plavka metallov (cf. English above), Revised edition, Metallurgiya, 1972, 348 pp (from Elektronnaya plavka metallov, pp 2-4)

Translation: The experience of Soviet and foreign researchers with respect to the development of the equipment and the technological process for melting metals by the method of electron bombardment is generalized in this book, and the work experience of the authors themselves is used. A study is made of the problems of the electron optical system, the electric power supply and the vacuum equipment of electron melting furnaces. Numerous data are presented on the studies of metals and alloys made by the method of electron bombardment and subjected to zonal purification. Some calculations are presented for the equipment to melt metals by electron bombardment, and variations in the chemical composition of metals and alloys during the melting process are illustrated. Some new prospects in the area of the application of the electron bombardment technique are investigated.

The book is intended for a broad class of engineering and technical workers of the research institutes, the design organizations and the nonferrous and ferrous metallurgical plants. It can be useful to students of the metallurgical and power engineering institutions of higher learning. There are 173 illustrations, 59 tables and a 199 entry bibliography.

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USSR

ZABORONOK, G. F., et al., Elektronnaya plavka metallov, Revised edition, Metallurgiya, 1972, 348 pp

Contents

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ESTIMATION OF ASYMPTOTIC STABILITY DOMAIN OF THERMAL REACTOR WITH DISCRETE TIME CONTROL -U-

AUTHOR--KONZHIN, O.B.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. (USSR); 28: 145-7 (FEB 1970).

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--XENON, THERMAL REACTOR, REACTOR CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0754 STEP NO--UR/0089/70/028/000/0145/0147

CIRC ACCESSION NO--AP0131349

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131349

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTEMPT WAS MADE TO EVALUATE PERMISSIBLE INITIAL DEFLECTION VARIABLES FROM THE STATIONARY VALUES IN THE REGION OF THE ASYMPTOTIC STABILITY AND TO DETERMINE ITS DIMENSIONS AS A FUNCTION OF REACTOR PARAMETERS. THE RESULTS SHOWED THAT THE MAGNITUDE RHO SUBP (ASYMPTOTIC STABILITY) DOES NOT DEPEND ON THE CONTROL INTERVAL DURING VARIATIONS WITHIN THE LIMITS OF PERMISSIBLE VALUES. IN THE REGION OF REAL PARAMETER VALUES, THE REGION OF PERMISSIBLE INITIAL DEVIATIONS OF XENON CONCENTRATIONS EXCEEDED CONSIDERABLY THE ZONE OF THE CONTROL LINEARITY.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710007-0"

USSR UDC: 8.74

RONZHIN, O. V.

"Some Aspects of Information Theory of Control Processes in Man-Machine Systems"

Moscow, V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automatons, Hybrid and Control Machines--collection of works) "Nauka," 1972, pp 160-167 (from RZh--Matematika, No 8, 1972, Abstract No 8V646)

Translation: A short analysis is given of the advantages and disadvantages of the methods of information theory as applied to control problems in man-machine systems. A new approach to the problem is developed, based on the modeling of the interrelationship between the man and the machine on the level of random processes. Application of the theory of discrete Markov chains in the uniform and nonuniform variants is proposed as the mathematical approach. On this basis, relationships of the entropy of the controlled process and the information actually developed by the operator in the form of explicit functions of discrete observation time are obtained. These relationships indirectly permit quantitative esti-

USSR

RONSHIN, O. V., V sb. Avtomaty, gibridn. i upravlyayushch. mashiny, "Nauka," 1972, pp 160-167

mates of the individual capabilities of the operator and a whole complex of conditions for indicating the usefulness of the information.

An attempt is made to obtain a quantitative expression for the semantics and value of the information prepared by the operator. The methods developed here are sufficiently general for the problems of controlling various objects.

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USSR

UDC 681.11.033.1

GRANKIN, V. K., MAKAROV, YU. S., RONZHIN, O. V., KOZYREV, L. S., and YEGOROV, A. YE.

"An Information Display Device"

USSR Author's Certificate No 372566 kl G 06 k 15/18, filed 17 Sep 70, published 27 Apr 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A405P)

Translation: An apparatus is proposed for information display, containing indicators and current conductors. To improve the reliability and visibility of the apparatus, its indicators are in the form of lighted edges located along the outline of geometric figures, with the current conductors at the vertices. One illustration.

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USSR

UDC: 8.74

RONZHIN, O. V.

"Some Aspects of Information Theory of Control Processes in Man-Machine Systems"

V sb. Avtomaty gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Computers--collection of works), Moscow, "Nauka", 1972, pp 160-167 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V646)

Translation: The advantages and disadvantages of the methods of information theory are briefly analyzed as applied to control problems in man-machine systems. The author develops a new approach to the problem based on modeling interrelations between man and machine on the level of random processes. The theory of discrete Markov chains in homogeneous and nonhomogeneous modifications is proposed for use as an appropriate mathematical apparatus. On this basis, relations are derived for the entropy of the process being investigated, and the information actually processed by the operator in the form

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USSR

UDC: 8.74

RONZHIN, O. V., Avtomaty, gibridn. i upravlyayushch. mashiny, Moscow, "Nauka", 1972, pp 160-167

of explicit functions of discretized observation time. These relations indirectly enable one to account qualitatively for the individual peculiarities of an operator and the entire set of conditions for presentation and use of information.

An attempt is made to derive quantitative expressions for the semantics and value of the data processed by an operator. The methods developed here are fairly general for problems in the monitoring and control of various objects.

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USSR

UDC:629.7.036.3:533.6

RONZIN, V. D., CHEREMISIN, P. M.

"Influence of Dependence of Heat Capacity on Gas Temperature on the Characteristics of Aviation Turbine Engines"

Sb. Nauch. Tr. Perm. Politekhn. In-t [Collected Scientific Works of Perm' Polytechnical Institute], 1973, No 132, pp 125-136 (Translated from Referativnyy Zhurnal Aviatsionnyye i Raketnyye Dvigateli, No 11, 1973, Abstract No 11.34.66, from the resume)

Translation: The method of small deviations is used in a study of the influence of variability of heat capacity of a gas on turbine characteristics. The dependence of heat capacity on gas temperature is considered by selection of heat capacity C_{picp}=const on the basis of the mean temperature of the adiabatic process of expansion in each blade set

$$T_{i_{av}} = \frac{T_{i-1} + T_{iag}}{2},$$

which provudes sufficient accuracy for the calculations where $(T_{i-1}^{*} - T_{ag}) < 200^{\circ}$. 2 Figures; 3 Biblio. Refs.

1/1

- 111 -

1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DETERMINATION OF ORNITHINE CARBAMOYLTRANSFERASE ACTIVITY BY WEBER'S MICROMETHOD -U-

AUTHOR-(02)-KUSHNER, R.A., ROOMERE, P.A.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1) 20-3

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG ANALYSIS, ENZYME ACTIVITY, HYDROLYSIS, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1626 STEP NO--UR/9099/70/000/001/0020/0023

CIRC ACCESSION NO--AP0106372

UNCLASSIFIED

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0106372 PROCESSING DATE--020CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME SLIGHT MODIFICATIONS OF THE TITLE METHOD WERE SUGGESTED. IN CASE THE CITRULLINE (I) USED AS A SUBSTRATE CONTAINED FREE NH SUB4 PRIME POSITIVE, A CONTROL INCUBATION WITH THE SUBSTRATE WAS NECESSARY, BUT THEN SPONTANEOUS HYDROLYSIS OF I MAY TAKE PLACE. TO PREP. 0.5M ASO SUB4 PRIME3 NEGATIVE BUFFER DISSOLVE 5.6 G NA SUB2 HASO SUB4.7H SUB2 O IN 80 ML DISTD. H SUB2 O, ADJUST THE PH WITH N HCL TO EXACTLY 7.15, AND MAKE UP WITH WATER TO 100 ML. ANOTHER METHOD IS TO DISSOLVE 4.75 G AS SUB2 O SUB3 AND 4 G NAOH IN A SMALL VOL. OF WATER AND WHILE THE SOLN. IS STILL WARM, ADD 6 ML 30PERCENT H SUB2 O SUB2 DROPWISE. AFTER STANDING 5 MIN, BOIL TO DECOMP. EXCESS H SUB2 O SUB2. ADD WATER UP TO 80 ML, ADJUST THE PH WITH 10-12.5 ML N HCL TO EXACTLY 7.15, AND MAKE UP TO 100 ML WITH WATER. WHEN DETG. ENZYMIC ACTIVITY, SATD. K SUB2 CO SUB3 SOLN. USED IN THE MICRODIFFUSION TECHNIQUE FOR NH SUB4 PRIME POSITIVE DETN. MUST NOT BE REPLACED WITH ALKALI SINCE IT WOULD HYDROLYZE GLUTAMINE.

UNCLASSIFIED

USSR

ROOS ELENA

"Limit Behavior of Distribution of Solution of Stochastic Differential Equation with Coefficients Dependent on the Entire Past Process"

Izv. AN EstSSR. Fiz. Mat. [News of Academy of Sciences, Estonian SSR, Physics, Mathematics], 1972, Vol 21, No 4, pp 347-359 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V138, by the author).

Translation: The limit behavior of the distribution of an unstable solution of a stochastic differential equation is studied. The coefficients of the equation, in contrast to a diffusion equation, depend on the entire past process, allowing more precise reflection of the actual physical sense of the phenomena described by the equation. The explicit form of the limiting equillibrium is concluded. The dependence on the past is introduced by a special functional of the trajectory of the process up to the present time. Only stable solutions of equations of this type have been studied in the past.

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ROSANOV, B.A.

Radioastronomy

SO: JPRS 59985
7 Sep 73

UDC 621.396.628.523.164

METHOD OF ALIGNMENT AND TECHNOLOGY OF FABRICATING MYTU RADIOTELESCOPE ANTENNAS

[Article by A.A. Parshchikov, B.A. Rosanov, K.S. Shantelay, and A.A. Tunygin of Moscow Higher Technical School imeni N.E. Bauman; Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Russian, Vol 16, No 5, 1973, submitted 4 November 1972, pp 665-668]

Error in fabricating the reflecting surface of an RTI-7.5-250 MYTU [Moscow Higher Technical School imeni N.E. Bauman] radiotelescope antenna (figure 1 [not reproduced]), according to aperture error theory, should not exceed ± 0.1 millimeter for effective operation in the shortwave portion of the millimeter wave band. The relative precision in the fabrication in this case should be $D/\sigma = (2 \text{ to } 3) \cdot 10^5$. Of all methods for monitoring the reflecting parabolic surfaces of antennas which are known to the author, the best is one which uses a fully rotatable technological model (shablon) for aligning an RTI-7.5/250 reflector. However, the method of alignment and which was used in fabricating the RT-22's at FIAN [Physics Institute imeni P. N. Lebedev of the USSR Academy of Sciences] and KrAO [Crimean Astrophysical Laboratory] does not permit a profile to be obtained with the required precision[1.2]. MYTU has developed a new method which permits successful solution of this problem.

The new method is based on the parabola's characteristic of focusing parallel rays at a single focal point. Figure 2 shows the scheme of a rig and location of the instruments. The rig includes: 1 -- an OKG-75 light source, 2 -- a mobile stand with a reflecting prism, 3 -- a guide bar, 4 -- a screen, 5 -- an AK-1000 automatic collimator, 6 -- a checking model, and 7 -- a reflector bridge.

Alignment of the model, previously fabricated with a precision of ± 0.4 millimeter by end gauges, is done this way.

UDC 577.3

CHUMAKOV, V. M., GRIGORYAN, G. L., SUSKINA, V. I., ROSANTSEV, E. G., and KALMANSON, A. E., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Study of Spin Labels in Animal Tissues"

Moscow, Biofizika, Vol 16, No 3, May/Jun 71, pp 564-565

Abstract: The stable free iminoxyl radicals 2,2,6,6-tetramethyl-4-aminopiperidine--1-oxyl and its maleic acid imide derivative were injected intraperitoneally to rats, mice, and frogs in aqueous solutions in a dose of 500-600 mg/kg. Within 2-4 hrs after injection of the solutions, the lyophilized tissues of the animals exhibited EPR spectra indicating the presence of firmly fixed (immobilized) free radicals. Wetting of the tissues with physiological saline solution transformed the EPR signal of firmly fixed free radicals into one typical for radicals with a higher mobility. On treatment of the lyophilized tissues with water vapor and O_2, the concentration of iminoxyl radicals, as indicated by the EPR spectrum, first increased to a maximum and then gradually decreased. The mositure content of the tissue samples in these experiments was brought to only 10% (i.e., only bound water was present), os that the radicals remained in the firmly fixed state. It was shown in earlier work by Chumakov and Kalmanson that

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USSR

CHUMAKOV, V. M., et al., Biofizika, Vol 16, No 3, May/Jun 71, pp 564-565

under these conditions the EPR tissue semiquinone signal associated with the semiquinone of coenzyme Q also increases and, on passing through a maximum, finally disappears. In the present work, disappearance of this signal, which contributed to the central component of the iminoxyl radical EPR spectrum, resulted from changes in the tissues spectrum (e.g., rat liver tissue) upon treatment with water vapor and O_2. A reaction between the iminoxyl and semiquinone radicals in the tissues could be assumed. The fact that the iminoxyl radicals react with semiquinones in a reversible reaction with the formation of hydroxylamines was established in experiments conducted in vitro in which semiquinones derived from benzoquinone, duroquinone, and naphthoquinone were applied. The results obtained indicated that iminoxyl spin lables are convenient redox indicators for the study of processes of electron transfer in the respiration chain of biological oxidation in mitochondria.

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USSR

UDC: 621.374.5(088.8)

ROSATKEVICH, G. K.

"A Square Pulse Stretcher"

USSR Author's Certificate No 268486, filed 25 Sep 68, published 12 Aug 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G249 P)

Translation: The proposed pulse stretcher contains a converting sawtooth voltage generator with external triggering and current-stabilizing transistor, parallel connected null indicators for the beginning and end of a reading with a flip-flop connected to their outputs, an interlocking circuit and a tracking device. To extend the dynamic range with respect to the duration of the converted pulses, a second sawtooth voltage oscillator with current-stabilizing transistor is connected between the output of the interlocking circuit and the inputs of the null indicators. The emitters of both transistors are directly interconnected, while their bases are interconnected through a variable resistor whose centertap is connected to one of the outputs of the tracking device.

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Acc. Nr: AP0040882 R Ref. Code: UR0103

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr / , pp 183-187

RELIABILITY OF RESERVED SYSTEMS WITH A RESTORING ELEMENT REALIZING THE MEDIAN FUNCTION

M. A. ROSENBLAT

Systems with parallel reservation containing a restoring element that fulfils the median function for continuous or numerical signals are considered. The reliability of such systems is determined taking into account the probability of failures of various kinds and the presence of a constant bias signal at the input of the restoring element, the introduction of which often allows improvement of the system reliability.

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REEL/FRAME 19750621

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USSR

UDC 541.64:546.76

GOLGOTIU, T., and ROSCA, I., Jassy Polytechnic Institute, Jassy

"Coordination Polymers from Cr^{III} Acetylacetonate and Diorganophospinic Acids"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 15 (A), No 9, Sep 73, pp 2086-2093

Abstract: Coordination polymers that contained Cr were prepared by reacting Cr^{III} acetylacetonate with diphenylthio-, diphenyldithio-, dibutyl-, diethyl-, diethylthio-, and diethyldithiophosphinic acids. The polymers contained 8.10-13.72% Cr. Thermogravimetric and differential thermal analysis of the polymers was carried out. Decomposition of the polymers began at 200-300° and was accompanied by the evolution of heat. Those containing S and alkyl groups has the lowest thermal stability. The end product of the decomposition was $Cr_2O_3 \cdot nP_2O_5$ in every case. A scheme of the formation of molecular orbitals in the polymers from those of the central ion Cr^{3+} and of the ligands is proposed. The polymers derived from diphenylthio- and diphenyldithiophosphinic acids exhibited the properties of semiconductors at 20-200°. The experimental results showed that every Cr^{3+} ion in the polymers was bound to one acetylacetonate group and two phosphinic acid residues, all of which functioned as bidentate ligands. Cr thus had the coordination number six.

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USSR

UDC 616.831-008.9-02:615.176.2.099

TARANOVA, N. P., and ROSENGART, V. I., Department of Biochemistry, First Leningrad Medical Institute Imeni Academician I. P. Pavlov

"Fractional Composition of Brain Gangliosides Normally and During Intoxication with Organophosphorus Cholinesterase Inhibitors"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 39-42

Abstract: Cerebral gangliosides obtained from healthy rabbits and rats were separated by means of thin-layer chromatography on silica gel into 9-10 fractions, which were classified according to their motility and the molar ratio between N-acetylneuraminic acid and sphingosine. Rat gangliosides differed from rabbit gangliosides by a smaller content of the G_3 fraction -- the main disialoganglioside -- and a correspondlingly greater content of the two other disialogangliosides: G_2 and G_{2a}. After intramuscular administration of a lethal dose of organophosphorus cholinesterase inhibitor, rabbits developed distinct pathological signs, such as salivation, tremor, dyspnea, and fibrillation and cramps of skeletal muscles, while none of these disorders were observed in rats. Subsequent chromatographic tests revealed

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USSR

TARANOVA, N. P., and ROZENGART, V. I., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 39-42

that the total quantity of gangliosides did not change in the rat brain, while it decreased by 15% in the rabbit brain. The fractional composition of gangliosides did not change during intoxication with the cholinesterase inhibitor.

2/2

1/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--CURRENT TRANSIENTS IN THE INSULATOR DETERMINED BY SPACE CHARGE AND DIFFUSION -U-

AUTHOR-(02)-ROSENTAL, A., LEMBER, L.

COUNTRY OF INFO--USSR

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CIRC ACCESSION NO--AP0110089 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATHEMATICAL PROBLEM OF ONE CARRIER SPACE CHARGE LIMITED CURRENT (SCLC) STEP RESPONSE IN A PERFECT INSULATOR IS SOLVED WITH A DIGITAL COMPUTER TAKING CARRIER DIFFUSION INTO ACCOUNT. CURVES OF FORWARD CURRENT DENSITY VS. TIME ARE PRESENTED WITH AN ERROR ANALYSIS AND A BRIEF DISCUSSION OF THE PARAMETER INFLUENCE FOR THE CASE OF A DIELECTRIC DIODE UNDER DIFFERENT VALUES OF APPLIED PULSE VOLTAGES IN THE STEADY STATE CURRENT RANGE WHERE A SQUARE LAW BEHAVIOUR BEGINS TO SHOW UP AND INCLUSION OF DIFFUSION IN THE TREATMENT IS INDISPENSABLE. THE LOWERING OF THE VOLTAGE IN THIS RANGE DEPRIVES GRADUALLY THE MEAN FEATURES OF SCLC TRASIENT ASCERTAINED FOR THE DIFFUSION NEGLECTED CASE. LAST OF ALL ONLY THE DIFFUSION DOMINATED CURRENT IN THE VERY BEGINNING OF THE TRANSIENTS REMAINS. THE MAXIMUM TIME FOR OBSERVING THE DIFFUSION CONTRIBUTION TO THE PULSE CURRENT ESTIMATED BY SCHILLING AND SCHACHTER PROVES TO BE UNDERSTATED.

FACILITY: INSTITUTE OF PHYSICS AND ASTRONOMY. FACILITY:
ACADEMY OF SCIENCES OF THE ESTONIAN SSR, TARTU (A). FACILITY:
AND TARTU STATE UNIVERSITY, TARTU (B).

UNCLASSIFIED

Forming

USSR

UDC 621.771.2

SICHEVOY, A. P., ROSENTAL', F. YE., TOKMAKOV, A. M., and SHENGUR, Yu. P., Candidates of Technical Sciences

"Increased Production and Quality of Periodical, Large-Diameter Rolling Profiles"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 5, Sep-Oct 70, pp 26-29

Abstract: A review is made of the operation of the first 120 three-roller mill for rolling periodical profiles. The technological process and production plan developed by the All-Union Scientific-Research Institute of Metallurgical Machinery is described. Operational deficiencies are cited and the new rolling mill stand developed by members of the Institute is described.

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USSR

UDC: 532.529

ROSENTHAL', O.M., GANEBNYKH, N.V., CHETIN, F.E. and KOBALEVA, R.M.

"High-Dispersion Water Aerosol in Electrostatic Field"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 15 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B1216)

Translation: Calculations were performed of deformations, oscillations and decomposition of droplets in electrostatic fields as functions of degree of particle dispersion. Analysis of elliptic deformations is based on an equation including Negibbs thermodynamic corrections. Extreme dependence of surface variation on particle volume in constant field was obtained. It is shown that droplets of $\sim 10^{-4}$ cm radius have the highest stability with respect to external actions. This result agrees with the actually observed size of droplets of water aerosol in atmosphere and cloud chambers and makes it possible to extrapolate the available measurements of the range of droplet

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USSR

ROSENTHAL', O. M., et al., 11-ya Vses. Konf. po Vopr Isparenlya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 p 15

size to the field of little known high-dispersion aerosol. It is established that Negibbs thermodynamic effects increase sharply the sensitivity of small particles to external electrostatic fields.

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USSR

UDC: 621.373.54

RODA, A. A., ROSHAL', A. S., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Concerning the Time Characteristics of a Tunnel-Diode Flip-Flop"

Moscow, Radiotekhnika, Vol 27, No 7, Jul 72, pp 52-55

Abstract: The time characteristics of a bistable tunnel-diode flip-flop are determined by digital computer integration of the corresponding differential equations for various values of the parameters and of the triggering signal. It is found that the speed of flip-flop operation is determined chiefly by the diode parameters. The relative level of the triggering signal also has an appreciable effect. The firing threshold, as well as the switching and delay times are considerably dependent on selection of the operating point. The lowest trigger signal amplitude is attained when the signal time is equal to or longer than the sum of the switching and delay times. Reducing signal length appreciably increases the triggering threshold.

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USSR

UDC 621.385.6

LOPUKHIN, V. M., MITSENKO, B. K., ROSHAL', A. S.

"Theory of a Two-Frequency Coupling with a Fast Cyclotron Electron Wave"

Kiev, Izvestiya vuzov SSSR, Radioelektronika, Vol XV, No 8, 1972, pp 1015-1021

Abstract: A foundation is laid for the equivalent diagram of a two-frequency input resonator of a coupling with a fast cyclotron electron wave. One of the types of oscillations is used to decrease the noise of the fast cyclotron wave on the open-circuit frequency to the temperature of a load cooled by liquid nitrogen. The results of the calculations performed by computer using the equivalent diagram obtained show that the investigated input device permits a single-channel noise coefficient to be obtained for the electron beam parametric amplifier $F = 1.5$. The relation is presented for the frequency separation of the two types of oscillations as a function of the relation of the beam and resonator parameters. In the calculated case the band width is reduced by four times by comparison with the usual electron beam parametric amplifier having a noise factor $F \leq 1.5$. At the $F < 1.7$ level the band is cut in half by comparison with the uncooled electron beam parametric amplifier.

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USSR

UDC: 681.3.06:51

ROSHAL', A. S.

"Algorithm for Rapid Ordering by Classes in the Case of a Limited-Capacity, Immediate-Access Memory"

V sb. Inzh.-mat. metody v fiz. i kibernet. (Methods of Engineering Mathematics in Physics and Cybernetics--collection of works), Moscow, Atomizdat, 1971, 1971, pp 96-98 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V814)

Translation: An algorithm is proposed for rapid ordering of elements $a(i)$ by classes, where the elements belong to a data block a with indices $i0 \leq i \leq ik$. When $i0$, ik are given, a part or the whole of the block a can be ordered. Membership in the class is determined by the auxiliary fun [sic] procedure which is set up so that elements for which

$$jR \leq a\max - a(i) < (j+1)R; \quad R(a\ \max - a\ \min)/m$$

belong to class number j, where $j=0, 1, \ldots, m$; $(m+1)$ is the number of classes distinguished; R is the range of variation of elements of each class;

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USSR

ORSHAL', A. S., Inzh.-mat. metody v fiz. i kibernet., Moscow, Atomizdat, 1971, pp 96-98

a_{max}, a_{min} are respectively the upper and lower bounds of the elements to be ordered: $a_{min} \leq a(i) < a_{max}$ $(i0 < i < ik)$. Ordering begins with the element at the beginning of the unordered part of the class with the lowest number j:i.e, $a(i0)$. The fun [sic] procedure is used to determine the class jc to which this element belongs. The elements standing at the beginning of the unordered parts of classes j and jc are then interchanged. The beginning of the unordered part of class jc is increased by one. The process is then repeated. It is noted that no more than one second is required for ordering a thousand elements on the M-220 computer. V. Mikheyev.

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USSR

ROSHAL', A. S.

UDC: 681.3:06.51

"Algorithm of Rapid Ordering by Classes in the Case of an Immediate-Access Memory of Limited Capacity"

V sb. Inzh.-mat. metody v fiz. i kibernet. (Engineering and Mathematical Methods in Physics and Cybernetics--collection of works), Moscow, "Atomizdat", 1971, pp 96-98 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V814)

Translation: An algorithm is proposed for rapid ordering by classes of elements $a(i)$ of a block a with indices $i0 \leq i \leq ik$. Accordingly, having given $i0$, ik, a part of block a or the entire block may be ordered. Membership in the class is determined by an auxiliary "fun" procedure which is set up in such a way that elements for which

$$jR \leq a\max - a(i) < (j+1)R;$$
$$R(a\ \max - a\ \min)/m,$$

belong to class number j, where $j=0, 1, \ldots, m$; $(m+1)$ is the number of classes distinguished, R is the range of variation of elements in each class, a max.

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USSR

ROSHAL', A. S., Inzh.-mat. metody v fiz. i kibernet., Moscow, "Atomizdat", 1971, pp 96-98 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V814)

a_{min} are respectively the upper and lower bounds of the ordering elements: $a_{min} < a(i) < a_{max}$ $(i0 < i < ik)$. Ordering begins with an element located at the beginning of the unordered part of the class with number j, i. e. $a(i0)$. The class jc to which this element belongs is determined by means of the "fun" procedure. The places of the elements standing at the beginning of of the unordered part of classes j and jc are then interchanged. The beginning of the unordered part of class jc is increased by one. The process is then repeated. It is noted that the time of ordering on the M-220 computer is no more than one second per thousand elements. V. Mikheyev.

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USSR

ROSHAL', A. S. and ROMANOV, P. V. UDC: 621.385.64

"Statistical Modeling of a Plane Magnetron's Steady-States"

Kiev, Izvestiya VUZ -- Radioelektonika, Vol. 13, No. 9, 1970, pp 1092-1098

Abstract: Since modeling of the magnetron's transient operation requires a great deal of time, even when done on an electronic computer, the steady-state operation only is considered in this article. The modeling was done on a type M-220 computer. By using only the steady state of the magnetron, the authors could model the transition processes from one steady state to another through a jump variation of one of the system parameters. Thus, the time required for the formation of a space-charge cloud is reduced to zero, the transition time to the new steady state can cover several periods of the magnetron's oscillation through special limiting mechanisms, and the modeling of a whole combination of steady states for various parameters can be done within a rea-

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sonable time. The time taken to compute one steady state with a step of 0.1 of the period was 0.7 to 2 hours. For simplicity, the authors limit themselves to the first moments of the random process distribution, with the emission characteristics of the cathode and the Q specified constant. The results of the computations are given in the form of curves. It is found that the nature of the relationships found in the statistical modeling agrees closely with the electron cloud dynamics in a plane magnetron, and that the results obtained can be used for determining the characteristics required for designing magnetrons.

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USSR

UDC 621.316.001.1

ROSHCHENYA A. T.

"Methods of Optimizing Electric Network Layouts"

Nauchn. tr. Mosk. inzh.-ekon. in-t (Scientific Works of Moscow Institute of Engineering Economics), 1970, vyp. 29, pp 92-97 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye 269)

Translation: Methods of optimizing the layouts of electric power networks are analyzed. The necessity for additional consideration of the nonuniformity of the load charts, compensation for reactive power, the allowability of normal and emergency operating conditions and also joint investigation of the network and power system as a whole are noted. The bibliography has 15 entries.

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USSR UDC[621.362:538.4].001.24

POPYRIN, L. S., PSHENICHNOV, N. N., ROSHCHIN, A. M., KHOKHLOV, L. K., SHISHKOV, Yc. V.

"Calculated Studies of Open-Cycle Power Magnetohydrodynamic Generators"

V sb. Teplotekhn. probl. pryamogo preobrazov. energii (Heat-Engineering Problems of Direct Energy Conversion--Collection of Works), Issue 2, Kiev, "Nauk. dumka," 1971, pp 3-11 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A173)

Translation: The results are presented of calculations on an electronic computer of the effect of finite (scalar) conductivity on the characteristics of a magnetohydrodynamic (MHD) channel, its length and profile, and also the results of a calculation of the cost of the MHD channel and the SP [?inherent parameters] of the magnetic system as a function of the finite conductivity and the temperature of heating up of the oxidant. The calculations were made with the aid of a mathematical model, worked-out at the Siberian Power Engineering Institute of the Siberian Department of the Academy of Sciences, USSR, for thermodynamic and technical-economic studies of composite power plants with open-cycle MHD. 3 ill. 2 tab. 2 ref.

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USSR

UDC 612.85.014.45

ROSHCHIN, A. V., and DOBROSERDOV, V. K., Moscow, Institute of the Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR; Hygiene Institute imeni F. F. Erisman

"Reaction of the Auditory Apparatus of Man to High Frequency Acoustic Vibrations"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 12, 1971, pp 3-7

Abstract: The effect of high-frequency scund of 4,000, 6,000, 10,000, and 15,000 Hz and 80 and 100 decibels on the auditory threshold of healthy 19-23 year old individuals was studied. Hearing loss was 25.7, 19.5, and 19.85 decibels one minute after stopping 6,000, 10,000, and 15,000 Hz sounds, respectively. These losses decreased with time after the experiments. Data are given for 3, 5, 10, 15, 20, 25, 30 minutes. Hearing was restored in 5, 15, and 25 minutes after 14,000, 6,000, and 10,000 Hz sound, respectively. Noise of 10,000 and 14,000 Hz and 100 decibels decreased the hearing by 3.28-3.43 decibels within the speech frequency range (4,000 Hz), with a restoration of hearing in 3 minutes. Sounds with the same frequency but of 80 decibels produced similar but less pronounced effects, and they were less fatiguing as compared with 100 decibel sounds. Sounds of 10,000 and 14,000 Hz are less harmful to hearing than sounds of 6,000 Hz.

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USSR

ROSHCHIN, G. V.

UDC 631.335

"A Two-Operation Analog Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, 1970, P 100 patent No 260972, filed 26 Aug 68

Abstract: This Author's Certificate introduces: 1. A two-operation analog device which contains a DC operational amplifier, input circuits, and a feedback circuit. As a distinguishing feature of the patent, the device is simplified and operational reliability is improved by making the feedback circuit in the amplifier in the form of series-connected, passive low-resistance and high-resistance elements whose point of connection is tied to the passive low-resistance circuits of additional inputs, the low-resistance passive element being connected to the amplifier output. 2. A modification of this device in which the distinguishing feature is an extension of the functional possibilities of the unit by connecting the input circuit of the amplifier through an inverter and resistor to the point of connection of the feedback elements of the operational amplifier.

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USSR

UDC 621.791.8:669.715

KISELEV, S. N., KHAVANOV, V. A., ROSHCHIN, V. V., and TARAN, V. I.

Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Alluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

Translation of Foreword: Welded structural elements made of aluminum and its alloys find wide application in various branches of industry. It is difficult to find a single industry where aluminum welded parts are not used. It is worthwhile to note that structural assemblies made of aluminum alloys can function under complex conditions of loads, temperature and aggressive media. It is now possible to produce structural members of aluminum alloys which are capable of functioning for long periods under complex operating conditions. Parts made of aluminum alloys can be welded regardless of thickness: from fractions of a millimeter for bellows assemblies, to several hundreds of millimeters, as in the case of heat exchangers. It is almost impossible to say at what thickness aluminum parts can no longer be welded. Application of the electroslag welding method, which was developed at the Institute of Electric Welding imeni Ye. O. Paton, has opened great possibilities for the welding of very thick aluminum parts. Development of heat-resistant aluminum alloys is being actively pursued in the Soviet Union and abroad. Because of high specific strength and resistance to corrosion, aluminum alloys find wide

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USSR

KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972 176 pp

application in the construction industry. Aluminum alloys are used for the production of wall panels, vitrages, casings, doors, various architectural decorative details, window casings, and pedestrian and transportation welded bridges. The high corrosion resistance of aluminum alloys has made possible their extensive use in the ship-building industry, especially for superstructures. Aluminum alloys are also used for the manufacture of large transportable containers, tanks, and other volume vessels, including railroad rolling stock. A large volume of welding of aluminum items is performed in the electrical industry. A gradual introduction of aluminum alloys in industries producing heat-exchanging equipment is one of the characteristic trends with respect to aluminum. Further application of welded aluminum structural elements in various branches of the machine-building industry depends to a great extent on new methods of welding aluminum alloys. Heretofore, aluminum alloys have been welded mainly in the horizontal position because of the high fluidity of molten aluminum. Lately, new welding methods have been developed which make it possible to weld aluminum alloys in all positions. For example, a new

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

pulsed welding method with fusable electrodes was developed at the Institute of Electric Welding. A new method for welding pipes by using pressure within the pipe was developed recently at the Scientific Research and Design Institute of Installation Technology (NIKIMTe). Automated welding of thick aluminum sheets in the vertical position was developed abroad. This method makes it possible to produce high-quality butt and angular welds. The development of new welding methods requires, as a rule, new welding equipment, in order to produce high-quality welds for structural members. This book summarizes the experience on production of weld assemblies from aluminum alloys in the Soviet Union and presents information on work carried out by Soviet and non-Soviet specialists on the production of weld construction members made of aluminum. Considering that this undertaking is very broad, the authors did not attempt to elucidate all problems related to the welding of aluminum alloys but emphasized mainly the gas-electric welding of aluminum. Welding of pipes and parts of large sizes that are used in critical assemblies are described in detail. Chapters 2, 7, and part of Chapter 6 were prepared by S. N. Kiselev;

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USSR

KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

Chapters 1 and 5 by V. V. Roshchin; Chapters 3 and 8 by V. I. Taran; and Chapters 4 and 6 by V. A. Khavanov.

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KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

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USSR

KISELEV, S. N., et al, Gazoelektricheskaya Svarka Alyuminiyevykh Splavov (Gas-Electric Welding of Aluminum Alloys), Moscow, "Mashinostroyeniye," 1972, 176 pp

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USSR

UDC: 539.385

TERENT'YEV, V.F., ROSHCHIN, V.V. and MASLOV, L.I., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Cyclic Strength of Dissimilar Weld Joints of Low-Carbon Steel With 18-8-Type Stainless Steel"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 73-80

Translation: This study concerns the cyclic strength of specimens from weld joints of dissimilar metals involving 20 and Kh18N1VT steels. The tests were conducted by alternating pure bending at room temperature. The specimens were prepared by non-consumable electrode welding using two variants: 1) surfacing sv-10Kh16N25M6 filler wire on 20 steel; 2) surfacing Kh18N10NT steel and filling in the basic groove with sv-08G2S welding wire. The cyclic strength of the weld joints of dissimilar steels made with austenitic filler wire under 10^8 loading cycles was 18-19 kg/mm^2 which is 20% lower than the fatigue limit of the weakest component of the weld joint -- the 20 steel. The cyclic strength of a joint made with austenitic filler wire as welded is determined by the strength of the fusion area. (4 illustrations, 6 biblio. references; summary)

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USSR

UDC 616.932-084.47-036.8-078.73

ROSHCHIN, V. V., STEPANOV, V. M., SHMUTER, M. F., and GIL'MANOVA, N. A., Central Asiatic Scientific Research Antiplague Institute and Chardarinskaya Rayon Sanitary-Epidemiological Station

"Use of the Antigen Neutralization Reaction for Determination of Antibody Level in People Vaccinated Against Cholera"

Moscow, Laboratornoye Delo, No 8, 71, pp 499-500

Abstract: The efficacy of cholera antibody erythrocyte diagnosticum used in the antigen neutralization reaction (ANR) to determine the antibody level in people vaccinated against cholera was studied. A group of adults was vaccinated twice in a 7-day interval with killed vaccine in a concentration of 8.10^9, with doses of 1 ml the first time and 1,5 ml the second time. It was found that the largest number of people with an antibody titer exceeding 1:40 and an arithmetic titer equaling 1:97 and 1:127 were found 6-9 days after the second vaccination. The number of people with such titers was considerably smaller during the first three days or 22-60 days after the second vaccination. The antibody titer in these groups also declined. Some variation in titer percentages found in people 22-60

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USSR

ROSHCHIN, V. V., et al., Laboratornoye Delo, No 8, 71, pp 499-500

days after vaccination may be due to the fact that immunological rearrangement in the organism of different people may not take place at the same rate. It was established also that using the ANR with the antibody diagnosticum, it is possible to isolate antibodies from people vaccinated against cholera as late as 60 days after the vaccination.

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USSR

UDC 576.851.315.095.18:615.33].07

ROSHCHIN, V. V., SULEYMENOV, B. M., and SEMIOTROCHEV, V. L., Central Asian Scientific Research Antiplague Institute, Alma-Ata

"The Possibility of Express Determination of the Sensitivity of Cholera Vibrios to Antibiotics With the Help of Erythrocyte Diagnosticum"

Moscow, Laboratornoye Delo, No 8, 71, pp 501-502

Abstract: Forty-five strains of cholera vibrios of different origin, all of them with typical properties and agglutinating with O-cholera serum, were used. Tetracycline, neomycin, and streptomycin were used in concentrations of 2.5-5, 2.5-5, and 10-20 active units per ml, respectively. The vibrios were incubated for 18 hours on alkaline agar and then seeded on peptone water pH 7.2 in doses of 5,000 and 40,000 cells/ml with the diagnosticum and one of the antibiotics. All of the vibrios strains exhibited great sensitivity to the antibiotics, producing negative hemagglutination reactions. It was further established that with the use of the erythrocyte antibody diagnosticum, precise and stable results can be obtained within 5-6 hours after the beginning of the investigation. Best results under practical conditions are obtained with cultures of 40,000 cells/ml.

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USSR

UDC 669.187.2.083.6.621.365.2

POVOLOTSKIY, D. YA., GRECHIN, R. I., RECHKALOVA, A. V., KOFMAN, YY. V., and ROSHCHIN, V. YE.

"Behavior of Oxygen and Reauction Products in Vacuum-Arc Remelting"

Moscow, Stal', No 12, Dec 73, pp 1092-1095

Abstract: Low-carbon (0.03-0.09 % C) and carbon (0.20-0.70% C) steels were used for consumable electrodes in 5-ton arc furnaces for the purpose of studying oxidation and reduction processes in vacuum-arc remelting (VAR) and the behavior of inclusions. It was noted that in VAR, refining of the metal from deoxidation products occurs as a result of mechanical removal of inclusions and reduction of unstable oxides by carbon. Stable inclusions of complex shape (corundum crystals and grains) are more fully removed by mechanical means; however, the same does not hold true for inclusions of spherical shape (globular corundum and glasses) and unstable inclusions. New types of inclusions are formed in the VAR process. Non-equilibrium inclusions, which transfer from the initial metal into the VAR ingot change composition to a more equilibrium composition and change shape to a more idiomorphic form. The length of the refining period when melting the initial metal for VAR has

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POVOLOTSKIY, D. YA., et al., Stal', No 12, Dec 73, pp 1092-1095

little effect on oxygen and inclusion content, so that there are savings in keeping the refining time as short as possible. Six figures, seven bibliographic references.

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USSR UDC 669.046.5

POVOLOTSKIY, D. Ya., ROSHCHIN, V. Ye.

"Formation and Removal of Steel Deoxidation Products"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS). (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 29-35

Translation of Abstract: Data are presented on regularities in the formation of deoxidation products during diffusional iron deoxidation in pipes 4-6 mm in diameter by zirconium, aluminum, titanium, and silicon. The effect of metal motion on the rate of impurity removal with different physico-chemical properties is considered. Optimal conditions for the removal of coarse and fine impurities with various surface properties from steel are outlined. 3 figures, 9 references.

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USSR

UDC 669:532.72

POVOLOTSKIY, D. YA., ROSHCHIN, V. YE., and KEYS, A. N., Chelyabinsk

"Diffusion of Titanium and Zirconium in Liquid Iron"

Moscow, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 222-223

Abstract: This article contains a description of the results of an experiment to determine the diffusion constants of titanium and zirconium in molten iron containing different amounts of oxygen. By the experimental curves for the temperature dependence of the diffusion coefficients of titanium and zirconium in iron on the amount of oxygen from 0.003 to 0.010 % O_2 the following expressions were derived:

$$D_{Ti} = 83.3 \exp(-50{,}600/RT)$$

$$D_{Zr} = 5.58 \exp(-36{,}100/RT)$$

It was also discovered that varying the oxygen content in the iron causes variation of the diffusion coefficient and activation energy of the reducing elements. The oxygen dissolved in iron increases the binding energy of titanium and zirco-

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POVOLOTSKIY, D. YA., et al, Izvestiya Akademii Nauk SSSR -- Metally, No 5, 1970, pp 222-223

nium and, obviously, other reducers in the quasi-crystalline lattice of the melt. High activation energy is required to bring the particles of these elements from the state of equilibrium preceding the transition to vacant sites with an increase in the oxygen content in the iron. From the table of diffusion coefficients of titanium and zirconium in iron it is apparent that for sufficiently high oxygen and reducing agent concentration, the oxygen and reducing agents are consumed for the formation of oxide inclusions and the apparent diffusion coefficient of the reducing agent decreases.

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Acc. Nr: AP0054027 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0065

102339w **Deep removal of oil from paraffins using selective solvents.** Pereverzev, A. N.; Roshchin, Yu. N. (USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(2), 25–8 (Russ). In order to limit oil and solvent content to 0.2–0.5 and 67–75%, resp., in paraffin deoiled at 0°, it was necessary to limit to 0.02–0.05% the oil content in the Me_2CO–C_6H_6 solvent mixt. used at 1:4 diln. for deoiling paraffin contg. 2.3% oil and at 1:4 and 1:5 diln. for 2-stage deoiling of crude paraffin contg. 16.4% oil when 100% solvent wash was used in each storage. Oil entrainment in the solvent was preventable when countercurrent application of solvent was used, and distn. of the more volatile oil components in the solvent evapn. section was avoidable when the initial b.p. was fixed at a suitable limit. Paraffin, m. 49.2, 55.4, and 60.0°, and contg. 0.2–0.5% oil was obtained in 62.0, 62.0, and 65.0% yield from crude Mangyshlak paraffin, b. 350–420, 400–50, and 420–90°, and contg. originally 13.4, 14.7, and 10.6% oil when 1030% of a 3:2 $MeCOEt$-C_6H_6 mixt. was used to deoil them in 3 stages at solvent ratios of 8.0:1, 9.8:1, and 47.0:1 for the first two paraffins and at solvent ratios of 7.7:1, 9.4:1, and 51.0:1 for the last. Narrowing of the paraffin fraction facilitated sepn. Recrystn. between stages further reduced oil content and made sepn. sharper. When 5% of a 300–30° fraction was added to a 420–90° fraction, solvent content in the cake was increased by 120–30% and the filtration rate was reduced by 34–45%. Lucile S. Davison

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USSR UDC 612.821

LOVCHINKOV, V. A., and ROSHCHINA, L. V.

"Nature of the Distribution of Dogs by Size of the 'Maximum' Dose of Caffeine for Them"

Leningrad, Metodiki Otsenki Svoystv Vysshey Nervnoy Deyatel'nosti, "Nauka," 1971, pp 77-84

Abstract: In this article, the nature of the distribution of dogs by the size of "maximum" doses of caffeine was investigated. Establishing a normal distribution made it possible to suggest a method of breaking all dogs into groups based on the statistical parameters of the distribution. Twelve bibliographic entries.

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Pharmacology and Toxicology

USSR

UDC 615.214.3

KHOLODOV, L. Ye., TASHUNSKIY, AL'TSHULER, R. A., MASHKOVSKIY, M. D., ROSHCHINA, L. F., SHERSHNEVA, S. I., LEYBEL'MAN, F. Ya., VOLZHINA, O. N., GORODETSKIY, L. Sh., and PETROVA, N. A., All-Union Chemical and Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Sydnocarb, a New Central Nervous System Stimulant"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 1, 1973, pp 50-52

Abstract: The recently developed heterocyclic compound sydnocarb -- N-phenylcarbamoyl-3-(β-phenylisopropyl) sydnonomine, $C_{18}H_{18}N_4O_2$ -- produced marked motor excitation in mice, rats, dogs, and cats, increased the frequency and decreased the amplitude of electrical potentials, shortened the latent period of conditioned avoidance reflexes, and reduced the duration of the somnifacient action of hexobarbital. It did not depress monamine oxidase activity, affect arterial pressure, or cause morphological changes in the viscera or peripheral blood. Administered to persons with various neurological and mental diseases (average dose 10 to 25 mg) characterized by asthenic, adynamic, and apathic disorders, sydnocarb had a pronounced stimulatory effect (exceeding that of amphetamine) without inducing euphoria or motor excitement, tachycardia, elevated blood pressure, or other peripheral changes. No signs of physical or

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KHOLODOV, L. Ye., Khimiko-Farmatsevticheskiy Zhurnal, No 1, 1973, pp 50-52

mental dependence were observed even in patients that received the drug more than 2 years. Sydnocarb has been authorized by the USSR Ministry of Health for use as a psychotropic agent.

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USSR UDC 615.217.32.015.45:[612.833.81:615.214.22

Roslchina [redacted], L. F., Laboratory of Pharmacology, All-Union Scientific-Research Chemico-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Effect of Anticholinesterases on Changes in Conditioned Reflexes Induced with Aminazine"

Moscow, Farmakologiya i Toksikologiya, No 5, Vol XXXIV, Sep-Oct 71, pp 532-535

Abstract: Various indications of the inhibitory action of Aminazine on the central cholinergic systems have been reported during the past two decades; the present study was aimed at determining the effect of physostigmine, galanthamine and sugamine on that action. With a test group of 6 rabbits and 20 rats, small doses of galanthamine (0.2-0.5 mg/kg) and physostigmine (0.02-0.05 mg/kg) reduced the latency period, triggered differentiation, and increased the number of intersignal reactions, in most of the animals; but in large doses (up to 2.0-5.0 and up to 0.2-0.5), there was some degree of inhibition in all animals. For sugamine there was no effect with doses of 0.5, 1.0 and 2.0 mg/kg, but there was a slight inhibitory effect with doses of 5.0 mg/kg.

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USSR

UDC 615.214.32.015.45:612.822.3

MASHKOVSKIY, M. D., and ROSHCHINA, L. F., Laboratory of Pharmacology at the All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Action of Azaphen on the Bioelectric Activity of the Brain"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 2, Mar-Apr 71, pp 144-148

Abstract: Azaphen -- 2-(4-methylpiperazinyl-1)-10-methyl-3,4-diazaphenoxazine -- resembles closely imipramine in a number of pharmacological properties. It displays antidepressive activity. Its effect on the bioelectric activity of the brain was investigated on cats and rabbits. The drug stimulated spontaneous bioelectric activity of the cortex, hipponcampus and reticular formation of the mesencephalon, lowered the thresholds of the activation reaction to a nociceptive irritation and electric stimulation of the reticular mesencephalic formation. Azaphen brought down the threshold of convulsive activity of the hippocampus and lengthened the duration of the after effect trace discharges. It potentiated the activating effect of amphetamine on the EEG; phenamine shows no effect on EEG in doues 0.5-1 mg/-kg; after pretreatment with azaphen (1-5 mg/kg) it causes desynchronization of the bioelectric activity.

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